Cancelled

generating a discharge current between the first electrode and the second electrode; and

monitoring a current input.

REMARKS

Claims 1-5, 7-18, and 20-22 are pending. Claims 1-5, 7-18, and 20 are allowed. By this amendment, claims 21 and 22 are amended. Reconsideration and allowance of the claims in view of the above amendments and the remarks that follow are respectfully requested.

Rejection of claims 21-22, under 35 U.S.C. §103(a)

Claims 21 and 22 have been rejected under 35 U.S.C. §103(a) over U.S. Patent No. 3,781,838 to Primmer (Primmer) in view of U.S. Patent No. 6,029,627 to Van Dyne (Van Dyne) for the reasons listed on pages 2-3 of the Office Action. This rejection is respectfully traversed.

Claims 21 and 22 have been amended to incorporate all the subject matter of original claims 9 and 10, and 12, 13 and 15, respectively, which the Examiner had indicated would be allowable if rewritten in independent form (see page 5 of the November 6, 2002, Office Action, Paper No. 4). Hence, at least for this reason, claims 21 and 22 are patentable over Primmer in view of Van Dyne.

Van Dyne is directed to ionization sensing technology, and describes an ionization signal sensor measured across a gap between spark plugs, for comparing the ionization signal to an excess-air factor λ. Van Dyne, as the Examiner cites, teaches monitoring current during combustion. Neither Primmer nor Van Dyne, alone or in combination, discloses an input current monitor electrically connected to a primary portion of the transformer (claim 21) or monitoring a current input (claim 22).

Claims 21 and 22 have been rejected under 35 U.S.C. §103(a) over U.S. Patent No. 4,629,992 to Nudelmont (Nudelmont) in view of U.S. Patent No. 6,029,627 to Van Dyne (Van Dyne) for the reasons discussed on page 3 of the Office Action. This rejection is also respectfully traversed.

As noted above, claims 21 and 22 have been amended to incorporate all the subject matter of original claims 9 and 10, and 12, 13 and 15, respectively, which the Examiner had indicated would be allowable if rewritten in independent form (see page 5 of the November 6, 2002, Office Action, Paper No. 4). Hence, at least for this reason, claims 21 and 22 are patentable over Nudelmont in view of Van Dyne.

B

As described above, Van Dyne does not render claims 21 and 22 obvious in light of Nudelmont. Van Dyne, as the Examiner cites, teaches monitoring current during combustion. Neither Nudelmont nor Van Dyne, alone or in combination, discloses a current monitor electrically connected to a primary portion of the transformer (claim 21) or monitoring a current input (claim 22).

Allowable subject matter

On page 4 of the Office Action, the Examiner has indicated that claims 1-5, 7-18 and 20 are allowed. Applicants thank the Examiner for indicating that these claims contain allowable subject matter.

In view of the above amendments and remarks, Applicants respectfully assert that the application is in condition for allowance. Prompt reexamination and allowance of claims 21 and 22 is respectfully requested.

Attached hereto is a marked-up version of the changes made to the and claims by the current amendment. The attached pages are captioned **"Version with markings to show changes made."** In addition, a clean copy of the pending claims is attached. The attached claims are captioned **"Pending Claims."**

Respectfully submitted,

Date: **March 25, 2003**

Sean Wooden, Reg. No. 43,997
DORSEY & WHITNEY LLP
1001 Pennsylvania Avenue, N.W.
Suite 400 South
Washington, D.C. 20004
Tel. (202) 442-3541
Fax (202) 442-3199

B

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Claims 21 and 22 have been amended as follows:

21. (Amended) An electronic circuit comprising:

a first electrode for electrical connection to an ionization detector system;

a second electrode for electrical connection to the ionization detector system;

a transformer electrically connected to the first electrode and to the second electrode for creating a spark between the first electrode and the second electrode;

a DC voltage source electrically connected to a primary portion of the transformer; and

a current monitor electrically connected to a primary portion of the transformer.

22. (Amended) A method of generating an electrical discharge for an ionization detector system comprising:

providing a first electrode and a second electrode, each electrically connected to the ionization system;

providing a transformer electrically that is connected to the first electrode and the second electrode, including a first resistor and a second resistor in a secondary portion of the transformer;

inputting a DC voltage into the primary portion of the transformer;

generating a discharge current between the first electrode and the second electrode; and

monitoring a current input.

B

PENDING CLAIMS

1. An electronic circuit comprising:

a first electrode for electrical connection to an ionization detector system;

a second electrode for electrical connection to the ionization detector system;

a transformer electrically connected to the first electrode and to the second electrode for creating a spark between the first electrode and the second electrode; and

a conjugated clock input electrically connected to the transformer.

2. The electronic circuit of claim 1, further comprising a first resistor electrically connected to a secondary coil in a secondary portion of the transformer.

3. The electronic circuit of claim 2, further comprising a second resistor electrically connected to the secondary coil in the secondary portion of the transformer.

4. The electronic circuit of claim 3, wherein the second resistor is connected in series with the first resistor.

5. The electronic circuit of claim 3, wherein the second resistor is connected in parallel with a diode.

6. Canceled.

7. The electronic circuit of claim 1, wherein the transformer comprises:

a primary portion including a primary coil; and

a secondary including a secondary coil, wherein the primary coil includes a different number of loops than are present in the secondary coil.

8. The electronic circuit of claim 7, wherein the primary coil includes a greater number of loops than are present in the secondary coil.

9. The electronic circuit of claim 1, further comprising a DC voltage source electrically connected to a primary portion of the transformer.

10. The electronic circuit of claim 9, further comprising a current monitor electrically connected to the DC voltage source.

11. A method of generating an electrical discharge for an ionization detector system comprising:

providing a first electrode and a second electrode, each electrically connected to the ionization system;

providing a transformer electrically connected to the first electrode and the second electrode;

inputting a DC voltage into the primary portion of the transformer; and

B

generating a discharge current having at least a first steady-state current plateau and a second steady-state current plateau between the first electrode and the second electrode.

12. The method of claim 11, wherein the providing the transformer step comprises including a first resistor in a secondary portion of the transformer.

13. The method of claim 12, wherein the providing the transformer step comprises including a second resistor in the secondary portion of the transformer.

14. The method of claim 13, wherein the providing the transformer step comprises connecting the second resistor in parallel with a diode.

15. The method of claim 13, further comprising monitoring a current input.

16. The method of clam 13, wherein the providing the transformer step comprises providing a primary coil and a secondary coil in the transformer wherein the primary coil and the secondary coil include a different numbers of loops.

17. The method of clam 16, wherein the providing the transformer step comprises providing the primary coil to have a greater number of loops than the secondary coil.

18. The method of claim 12, wherein the generating the discharge current step comprises generating a substantially constant steady-state current plateau.

19. Canceled.

20. The method of claim 11, wherein the generating the discharge current step comprises providing the net amplitude of a first steady-state current plateau exceeding the amplitude of a second steady-state current plateau.

21. An electronic circuit comprising:

a first electrode for electrical connection to an ionization detector system;

a second electrode for electrical connection to the ionization detector system;

a transformer electrically connected to the first electrode and to the second electrode for creating a spark between the first electrode and the second electrode;

a DC voltage source electrically connected to a primary portion of the transformer; and

a current monitor electrically connected to a primary portion of the transformer.

22. A method of generating an electrical discharge for an ionization detector system comprising:

providing a first electrode and a second electrode, each electrically connected to the ionization system;

B

providing a transformer electrically that is connected to the first electrode and the second electrode, including a first resistor and a second resistor in a secondary portion of the transformer;

inputting a DC voltage into the primary portion of the transformer;

generating a discharge current between the first electrode and the second electrode; and

monitoring a current input.

B5